ACCESSION NO: AP3006764

S/0190/63/005/009/1393/1397

AUTHORS: Fomenko, B. A.; Volodin, V. P.; Sidorovich, A. F.; Kuvshinskiy, Ye. V.

TITLE: Thermomechanical investigations of polyisobutylene by means of dilation and penetration

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 5, no. 9, 1963, 1393-1397

TOPIC TAGS: polymer, thermal oxidation, single axis elongation, polyisobutylene, amorphous polymer, thermomechanics

ABSTRACT: The low-molecular-weight polymer was prepared by means of thermal oxidation decomposition of the high-molecular-weight product, heating the latter in air at 160-170C for 50 hours. The characteristic molecular weights M_{w1} and M_{w2} were 0.55×10^6 and 1.86×10^6 respectively. The method of investigation consisted of single-axis elongation of a film strip under a constant force, and penetration by a 3-mm cylindrical indentor under a gradual temperature rise. The results show behavior of polyisobutylene analogous to other linear polymers. As in other amorphous polymer deformations, a sharp branch in the thermomechanical curve of polyisobutylene shows a superelastic behavior. Orig. art. has: 4 figures.

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ACCESSION NO: AP3006764

ASSOCIATION: Institut vy*sokomolekulyarny*kh soyedineniy AN SSSR (Institute of High-Molecular-Weight Compounds AN SSSR)

SUBMITTED: 07Mar62 DATE ACQ: 30Sep63 ENCL: 00

SUB CODE: CH NO REF SOV: 008 OTHER: 000

Card 2/2

GARCHEV, Petr Ivanovich[Harchev, P.I.]; MALKIYEL', Semen Veniaminovich [Malkiiel', S.V.]; FOMENKO, B.A., red.; LIMANOVA, M.I., tekhn. red.

[Lenin Collective Farm in Lebedin District of Sumy Province] Kolhosp imeni Lenina Lebedynskoho raionu na Sumshchyni. Kharkiv, Kharkivs'ke knyzhkove vyd-vo, 1963. 90 p. (MIRA 17:1)

FOMENKO, B.A.; ORLOV, V.A.; TARAKANOV, O.G.

Studying the kinetics of polyurethane formation by the change of the specific volumetric resistance of the thermosetting system. Plast.massy no.10:47-49 '64. (MIRA 17:10)

L 24116-66 EWT(1)/EWP(m)/EWA(d)/T-2/EWA(1) IJP(c)
ACC NR: AP6011515 SOURCE CODE: UR/0382/66/000/001/0074/0084

AUTHOR: Vulis, L. A.; Fomenko, B. A.

ORG: none

TITLE: Transient conditions of flow in magnetohydrodynamics

SOURCE: Magnitnaya gidrodinamika, no. 1, 1966, 74-84

TOPIC TAGS: magnetohydrodynamics, transient flow, conductive fluid, laminar flow, Reynolds number

ABSTRACT: A discussion is presented of the qualitative characteristics of a conducting liquid flow in a channel in the presence of a magnetic field in the transient region of the flow between the laminar and turbulent flows. Interpolation formulas for the friction coefficient as a function of Reynolds and Hartmann numbers are analyzed. Theoretical data are compared with the experimental results. Orig. art. has: 9 figures and 16 formulas. [Based on authors' abstract] [NT]

Card 1/1 UDC: 538.4

FOMENKO, B.D.

Meteorological observations during the solar eclipse of June 30, 1954.
Biul.VAGO no.20:47-50 '57. (MLRA 10:8)

1.Stalingradskiy pedagogicheskiy institut.
(Eclipses, Solar--1954)
(Meteorology--Observations)

FOMENKO, B.D.

Variations of the coefficient of atmospheric transparency during the total solar eclipse of June 30, 1954 [with summary in French]. Astron. zhur. 34 no.6:868-882 N-D '57. (MIRA 11:2)

1. Stalingradskiy pedagogicheskiy institut i Gosudarstvennyy astronomicheskiy institut im. P.K. Shternberga.
(Eclipses, Solar--1954) (Atmospheric transparency)

FOMENKO, B. D. Cand Phys-Math Sci -- (diss) "Change in the Coefficient of Atmosphere Diathermancy ~~Coefficient of the Atmosphere~~ During the Total Solar Eclipse of 30 June 1954." Mos, 1957. 6 pp 22 cm. (Mos State Univ im M. V. [redacted] Lomonosov, State Astronomical Inst im P. K. Shternberg), 100 copies (KL, 26-57, 104)

FOMENKO, B.D.

Aurora borealis in Stalingrad. Astron.tsir. no.185:24-25 O '57.
(MIRA 11:4)

(Auroras)

KLIMENKO, I.Ye.; FOMENKO, B.D.

Some problems in observing artificial earth satellites. Biul. sta.opt.nabl.isk.sput.Zem. no.6:8-10 '59.
(MIRA 13:6)

1. Stalingradskaya stantsiya nablyudeniya iskusstvennykh sputnikov Zemli.
(Artificial satellites--Tracking)

FOMENKO, B.D. (Stalingrad)

Changes in the total and scattered solar radiation during the solar eclipse of June 30, 1954, observed in Tikhoretsk and Sal'sk. Biul.VAGO no.24:37-40 '59. (MIRA 13:4)

1. Stalingradskoye otdeleniye Vsesoyuznogo astronomo-geodezicheskogo obshchestva.
(Eclipses, Solar--1954)
(Solar radiation--Observations)

FOMENKO, B.D.

PHASE I BOOK EXPLOITATION SOV/5575

Akademiya nauk SSSR. Astronomicheskiy sovet.

Byulleten' stantsiy opticheskogo nablyudeniya iskusstvennykh sputnikov Zemli, no. 6. (Bulletin of the Stations for Optical Observation of Artificial Earth Satellites, No. 6) Moscow, 1959. 23 p. 500 copies printed.

Sponsoring Agency: Astronomicheskiy sovet Akademii nauk SSSR.

Resp. Ed.: Ye. Z. Gindin; Secretary: O. A. Severnaya.

PURPOSE : This bulletin is intended for scientists and engineers concerned with optical tracking of artificial satellites.

COVERAGE : The bulletin contains 9 articles which present the results of satellite observations, and describe methods and specific equipment used for photographic observation of earth satellites. An appendix contains a listing of 84 Soviet satellite observation stations with station number. No personalities

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are mentioned. There are no references.

TABLE OF CONTENTS:

Card 2/6

37315
S/169/62/000/004/018/103
D228/D302

3,5120

AUTHORS: Pariyskiy, N. N., Hu Jen-Ch'ao, Fomenko, B. D. and Gindilis, L. M.

TITLE: Changes in the ozone layer during the annular solar eclipse of April 19, 1958, on Hainan Island

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 4, 1962, 7, abstract 4B68 (Acta geophys. sinica, 10, no. 1, 1961, 1-16)

TEXT: A Sino-Soviet group investigated the ozone content from solar-eclipse observations during the annular solar eclipse of April 19, 1958, on Hainan Island. A spectrograph, which was employed to observe simultaneously the zodiacal light and the counter-radiance, was used in the observations. The observational procedure and the processing of the resulting data are described. The results show that the content of atmospheric ozone changes conspicuously during a solar eclipse. It is noted that the concentration rises up to the moment half an hour after the middle of the eclipse; the lay-

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Changes in the ozone ...

yer's thickness then subsequently decreases. [Abstracter's note: Complete translation.]

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39090
S/169/62/000/006/071/093
D228/D304

3.1800

AUTHOR: Fomenko, B. D.

TITLE: The synoptic relation of solar activity to processes in the troposphere

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 6, 1962, 8, abstract 6G40 (Solnechnyye dannyye, no. 9, 1961,74-78)

TEXT: Local high-temperature coronal areas over the sun's active regions generate high-energy corpuscles, ensuring the high electron temperature of coronal gas at the distance of the earth's orbit (Chapman (Chepmen) model of an extended corona). The solution of the heat-conductivity equation shows that the ionosphere's heating in a comparatively short time and the development of synoptic-type tropospheric disturbances, associated with this heating, can be guaranteed only by high-speed flows of corpuscles. Such a mechanism leads to tropospheric disturbances only in years of high solar activity; in years of minimum activity there are no local areas of heating, since local high-temperature coronal areas

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S/169/62/000/006/071/093
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The synoptic relation ...

are absent over the active regions. The coefficients of correlation between the level of solar activity, characterized by the area of sunspots, and the change in the atmospheric pressure (the atmosphere's local heating must lead to airmass movement and consequently to pressure changes) were calculated from the data of meteorologic stations near Volgograd in order to verify these considerations. Very low values for the coefficients, when there is practically no relation, are also found in addition to high values. The coefficients are of different signs. It is supposed that for the earth's local areas the simultaneous effect of two types of solar activity influence on the troposphere may hamper the exposure of this correlation. On the whole the correlative dependence bears a pulsatory character, reflecting the pulsatory nature of the solar activity itself. [Abstracter's note: Complete translation.]

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3.5/50

S/169/62/000/009/079/120
D228/D307

AUTHOR: Fomenko, B. D.

TITLE: Variation in the atmospheric transparency factor in the spectral sections 2900-5250, 5250-6250, and 6250-20,000 Å during a solar eclipse

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 9, 1962, 29, abstract 9B175 (Uch. zap. Stalingr. gos. ped. in-ta, no. 11, 1959, 61-79)

TEXT: Measurements were made on an actinometer with Schott (Shott) filters near Tikhoretsk during the solar eclipse of June 30, 1954. The transparency factors were computed from the formula of Bouguer. Using the distribution of solar energy at the atmosphere's upper boundary ($S_{0,\lambda}$), the values of $S_{0,\Delta\lambda}$ were calculated for three chosen spectral sections and for the eclipse's different phases. The transparency factors for the eclipse's different phases were determined from the measurement data and the calculated values of $S_{0,\Delta\lambda}$. On the grounds of the relations obtained the author supposes the

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increase in the transparency factor in the short-wave spectral section, when the eclipse's phases are >0.95, to be connected with the fact that the amount of ozone decreased by 1/3 during the eclipse. This occurs in consequence of the effect whereby the solar disc is darkened from the center towards the edge, when the share of the intensity of ozone-forming radiation diminishes as compared with that of ozone-disintegrating radiation. The resulting increase in the transparency factor during the eclipse in the long-wave spectral section is related to the increase in the absolute humidity that occurred as a result of the changed synoptic conditions. [Abstracter's note: Complete translation.]

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FOMENKO, B.D.

Meteorological observations during the total solar eclipse of February 15, 1961, in Volgograd Province. Biul.VAGO no.32: 32-34 '62. (MIRA 15:11)

1. Volgogradskoye otdeleniye Vsesoyuznogo astronomo-geodezicheskogo obshchestva.

(Eclipses, Solar--1961)
(Volgograd Province--Meteorology--Observations)

S/886/62/000/000/002/003
D207/D308

AUTHORS: Pariyskiy, N.N., Hu Jen-ch'ao, Fomenko, B.D., and Gindilis, L.M.

TITLE: Measurements of the ozone layer during the annular solar eclipse on April 19, 1958, on Hainan Island

SOURCE: Sbornik trudov MGU po Mezhdunarodnomu geofizicheskom godu; astronomiya. (Moscow) Izd-vo Mosk. univ., 1962, 31-53

TEXT: The observations during the eclipse were carried out by a joint Soviet-Chinese expedition led on behalf of the USSR Academy of Sciences by A.P. Molchanov, and on behalf of the Chinese Academy of Sciences by Ch'eng Fang-yung. The expedition was organized by the Chairman of the Astronomicheskiy sovet AN SSSR (Astronomical Council, AS USSR) A.A. Mikhaylov and his deputy B.V. Kukarkin. On the Chinese side there was a special committee led by the Vice-President of the Chinese Academy of Sciences Wu Yu-hsiung. The optical group included N.N. Pariyskiy of the Institut fiziki Zemli AN

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Measurements of the ozone ...

SSSR (Institute of Physics of the Earth, AS USSR) and the Gosudarstvennyy astronomicheskiy institut im. P.K. Shternberga (State Astronomical Institute imeni P.K. Shternberg), L.M. Gindilis of the State Astronomical Institute imeni P.K. Shternberg, Hu Jen-ch'ao and Yu Hai-jen, both of the Peking Geophysical Institute of the Academy of Sciences of the Chinese People's Republic. The optical group was led by N.N. Pariyskiy. The results were analyzed by B.D. Pomenko of the Stalingradskiy pedagogicheskiy institut im. A.S. Serafimovicha (Stalingrad Pedagogical Institute imeni A.S. Serafimovich) under the direction of N.N. Pariyskiy. The time service was provided by the Chinese scientists Ch'eng Fang-yung and Wang Shou-kuan. The observations were carried out at the south extremity of Hainan Island at a latitude of about + $18^{\circ}.3$. The variations in the ozone layer thickness during the eclipse were observed together with the gegenschein using a very-high-speed nebular spectrograph НКС (NKS) with quartz-lithium fluoride optical parts; the spectrograph is described in detail in the article of N.N. Pariyskiy and L.M. Gindilis. Since the NKS spectrograph was designed primarily for observations of the gegenschein and zodiacal light, a special photometric

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attachment was used to adapt it for ozone line measurements. The ozone spectrum (3000 - 3400 Å) showed a general tendency for the ozone-layer thickness to increase up to 1 hour after the climax of the eclipse. A detailed analysis will be published in a separate communication. There are 4 figures and 7 tables.

SUBMITTED: January 2, 1960

Card 3/3

41190

S/033/62/039/005/003/011
E032/E314

3,1540

AUTHOR: Fomenko, B.D.

TITLE: Properties of type-M solar corpuscular streams as deduced from an analysis of their influence on the troposphere

PERIODICAL: Astronomicheskiy zhurnal, v. 39, no. 5, 1962, 833 - 839

TEXT: A statistical analysis is reported of the correlation between plages and tropospheric disturbances for the descending branch of solar activity when the relative Wolf number is in the range $15 < R < 75$. 719 plages were included in the analysis covering the period 1906 - 1952. The observational material was taken from the data on the passage of plages through the solar centre, as reported by the Sluzhba Solntsa SSSR (Solar Service, SSSR), Meudon, Coimbre, Guadalcanal and Mount Wilson observatories. A full list of the data is given in the papers of E.R. Mustel' (Astron.zh., 38, 28, 1961; 39, 813, 1962). The analysis also includes meteorological data on atmospheric pressure for Moscow, Tbilisi, Volgograd, Archangel and Omsk. The superimposed

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Properties of ....

epoch method is used to analyse the data. Inspection of the statistical curves shows that they all have a maximum at about $\Delta t = 6^d$ and this suggests that the maximum disturbances in the lower layers of the Earth's atmosphere occur six days after the passage of the plages through the centre of the solar disc. There are further secondary maxima to the left of the principal maximum at $\Delta t = 6$ but these are ascribed to the longitudinal distribution of plages on the Sun. It is argued that these curves indicate that type-M corpuscular streams are responsible for an increase in the pressure in the lower layers of the terrestrial atmosphere. The fact that this effect occurs in the entire atmosphere is indicated by Fig. 3, in which the statistical curves for the seven points mentioned above are given (curves 1-7, respectively). Curves 5-7 refer to night observations. In all cases, the maximum occurs at $\Delta t = 6$ days. The general conclusion is that there is a definite correlation between atmospheric disturbance and plages, that the atmospheric disturbances reach a maximum after an average interval of six

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Properties of ....

days after the passage of the plages through the centre of the disc, that the atmospheric disturbances in the lower layers of the atmosphere are accompanied by an increase in the atmospheric pressure and that the plages are the main sources of corpuscular streams. There are 3 figures and 1 table.

ASSOCIATION: Volgogradskiy pedagogicheskiy institut
(Volgograd Pedagogical Institute)

SUBMITTED: October 15, 1961

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Card 3/3

FOMENKO, B.D.

Calculating relative changes in the atmospheric transparency coefficient during a solar eclipse. Biul. VAGO no.33:16-18 '63. (MIRA 16:4)
1. Volgogradskoye otdeleniye Vsesoyuznogo astronomo-geodezicheskogo obshchestva.
(Eclipses, Solar)
(Atmospheric transparency)

ACCESSION NR: AT4016594 S/2556/63/000/034/0003/0004

AUTHOR: Fomenko, B. D.

TITLE: Solar corpuscular streams of active regions and atmospheric disturbances

SOURCE: Vsesoyuznoye astronomo-geodezicheskoye obshchestvo. Byulletin', no. 34, 1963, 3-4

TOPIC TAGS: corpuscular stream, solar active region, sun, astronomy, M-disturbance, calcium flocculus, flocculus, geomagnetic disturbance, atmospheric pressure, frozen-in magnetic field, upper atmosphere, stratosphere

ABSTRACT: Mustel' has demonstrated that geomagnetic M-disturbances are caused by solar corpuscular streams associated with calcium flocculae. A geomagnetic M-disturbance sets in $\Delta t = 6^d$ after a flocculus crosses the central meridian. Disturbances in the lower layers of the atmosphere set in after the same time. M-disturbances cause an increase of atmospheric pressure with a maximum at $\Delta t = 6^d$. It is postulated that the frozen-in magnetic field of the stream is broken up in the upper atmosphere and the latter experiences considerable heating and expansion, leading to the same effects in the lower layers. A study has been made to test this mechanism. Radiosonde data for Volgograd and Moscow were used; data on flocculae were furnished by Mustel'. The super-

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ACCESSION NR: AT4016594

posed epochs method was used to determine the relationship between disturbances at different atmospheric heights and solar corpuscular streams from active regions. The "zero phase" corresponds to passage of a flocculus across the central meridian. Statistical curves for Moscow and Volgograd for the heights 0, 5, 10 and 15 km are shown in Enclosures. There is a lag of 0.5-1^{d} in the surface layer in comparison with the event in the stratosphere. The character of the maximum and its distance from the "zero phase" indicates that the mean velocity of corpuscular streams is 370-400 km, in good agreement with other determinations. The stable maximum of disturbances at $\Delta t = 6^{d}$ for all heights in the troposphere and stratosphere indicated correctness of the postulated mechanism. Orig. art. has: 2 figures.

ASSOCIATION: Volgogradskiy pedinstitut, Volgogradskoye otdeleniye VAGO (Volgograd Teachers Institute, Volgograd Division VAGO)

SUBMITTED: 00 DATE ACQ: 24Feb64 ENCL: 02

SUB CODE: AS NO REF SOV: 004 OTHER: 001

Card 2/2

ACCESSION NR: AT4016595 S/2556/63/000/034/0005/0007

AUTHOR: Fomenko, B. D.; Bonelis, I. V.

TITLE: The relationship between calcium flocculae and disturbances of the lower layers of the earth's atmosphere in 1950

SOURCE: Vsesoyuznoye astronomo-geodezicheskoye obshchestvo. Byulleten',, no. 34, 1963, 5-7

TOPIC TAGS: astronomy, sun, calcium flocculus, geomagnetic disturbance, corpuscular stream, M-disturbance, solar activity, sunspot, atmospheric pressure, superposed epoch, flocculus, solar active region

ABSTRACT: A study has been made of the relationship between solar calcium flocculae and disturbances in the earth's atmosphere for a period of solar activity when $65 < R < 125$, where R is the smoothed sunspot number. Synoptic charts for solar rotations 1291-1299, prepared at the Meudon Observatory, were used, together with atmospheric pressure data for Tbilisi, Volgograd and Arkhangel'sk. The superposed epochs method was used for determining the relationship between disturbances in the lower atmosphere and corpuscular streams associated with calcium flocculae. Forty-six flocculae observed during March-November 1950 were used. The number of flocculae crossing the central meridian with

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ACCESSION NR: AT4016595

longitude intervals $\triangle L_{sol}$ of 1^d, 2^d, 3^d, ... days is shown in Enclosure. In constructing statistical curves for flocculae with identical $\triangle L_{sol}$ the following values were combined: $\triangle L_{sol} = 3\text{-}4^d$, $\triangle L_{sol} = 5\text{-}6^d$, $\triangle L_{sol} = 9\text{-}10^d$ ... Statistical curves obtained by the superposed epochs method are shown as Figures 1, 2 and 3 in Enclosure. On these curves there is only one peak, falling at $\triangle t = 6^d$. The peak shows that for the most part the disturbance maximum in the lower atmosphere appears $\triangle t = 6^d$ after a calcium flocculus crosses the solar central meridian. Calcium flocculae determine the boundaries of active regions. Therefore, corpuscular streams emanating from active regions are responsible for the recurrent geomagnetic disturbances causing disturbances in the earth's atmosphere. "The author wishes to thank S. B. Nikolayev for assistance in collection of the meteorological data". Orig. art. has: 3 figures.

ASSOCIATION: Volgogradskiy pedinstitut, Volgogradskoye otdeleniye VAGO (Volgograd Teachers Institute, Volgograd Division VAGO)

SUBMITTED: 00 DATE ACQ: 24Feb64 ENCL: 04

SUB CODE: AS NO REF SOV: 003 OTHER: 000

Card 2/2

OK

ACCESSION NR: AP3004325 S/0033/63/040/004/0700/0702

AUTHOR: Fomenko, B. D.; Bonelis, I. V.; Kuby*shkin, V. V.

TITLE: The latitude and height dependence of atmospheric disturbances due to type M solar corpuscular streams

SOURCE: Astronomicheskiy zhurnal, v. 40, no. 4, 1963, 700-702

TOPIC TAGS: atmospheric disturbance, atmospheric disturbance latitude dependence, atmospheric disturbance height dependence, corpuscular stream, solar corpuscular stream, type M solar corpuscular stream, radio sounding

ABSTRACT: The latitude dependence of atmospheric disturbances has been detected from a study of data, in addition to that used previously (B. D. Fomenko, Astron. zh., v. 39, 833, 1962). It is found that the amplitude of atmospheric disturbances increases with geomagnetic latitude. Radio sounding data show that the disturbance occurs in the atmosphere. Orig. art. has: 4 figures and 1 table.

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ACCESSION NR: AP3004325

ASSOCIATION: Volgogradskiy pedagogicheskiy institut (Volgograd Pedagogic Institute)

SUBMITTED: 07Feb63 DATE ACQ: 20Aug63 ENCL: 00

SUB CODE: 00 NO REF SOV: 005 OTHER: 000

Card 2/2

FOMENKO, B.D.

Correlation of the secular intensity variation of cosmic rays in the stratosphere with solar activity. Geomag. i aer. 4 no.2:402 Mr-Ap '64. (MIRA 17:4)

1. Volgogradskiy gosudarstvennyy pedagogicheskiy institut.

ACC NR: AR6032141 SOURCE CODE: UR/0169/66/000/006/A015/A015

AUTHOR: Fomenko, B. D.

TITLE: Influence of solar corpuscular streams on the lower layers of the terrestrial atmosphere

SOURCE: Ref. zh. Geofizika, Abs. 6A91

REF SOURCE: Sb. Solnechn. aktivnost'. No. 2, M., Nauka, 1965, 53-84

TOPIC TAGS: atmospheric pressure, corpuscular stream, active solar region, chromospheric flare, geomagnetic latitude, solar corpuscular stream, SOLAR CHROMOSPHERE, SOLAR FLARE, SOLAR CORPUSCULAR RADIATION

ABSTRACT: The correlation between variations of atmospheric pressure in the lower atmospheric layers and corpusular streams has been studied. Streams from active ... regions generating recurrent geomagnetic perturbations and also streams ejected from chromospheric flares are discussed. Investigations are made by superposition of epochs. Atmospheric pressure in the lower layers reaches maximum approximately six days after the passage of the active region through the central meridian. The perturbation amplitude of atmospheric pressure increases with geomagnetic latitude and diminishes with the altitude above the earth's surface; the effect of disturbed atmospheric pressure vanishes totally at the height fo 20—25 km. The highest pressure, caused by corpuscular streams, occurs three days after the chromospheric

Card 1/2 UDC: 523.745:551.590.21

ACC NR: AR6032141

flare. The correlation between the variation of atmosheric pressure and solar corpuscular streams is proved statistically.

SUB CODE: 04/ SUBM DATE: none

Card 2/2

ACC NR: AR6032353 SOURCE CODE: UR/0169/66/000/007/A020/A020

AUTHOR: Fomenko, B. D.; Kubyshkin, V. V.

TITLE: Temperature fluctuations in atmospheric disturbances as a function of recurrent solar corpuscular streams

SOURCE: Ref. zh. Geofizika, Abs. 7A116

REF SOURCE: Sb. Solnechn. aktivnost', No. 2. M., Nauka, 1965, 85-87

TOPIC TAGS: atmospheric disturbance, solar corpuscular radiation, solar corpuscular stream, solar corpuscular temperature fluctuation, flocculus

ABSTRACT: Data on center flocculi, i. e., floculli having a heliographic width of not more than 6° and situated in the solar hemisphere disposed to affect the earth, were selected for subsidence curves of the 18th and 19th solar activity cycles, when the Wolf number was between 15 and 75. At the same time an analysis was made of flocculi having a heliographic width greater than 6° and situated in the solar hemisphere not producing geophysical effects on the Earth. Data obtained in high altitude temperature soundings made at Tbilisi, Volgograd, Moscow, Arkhangel'sk and Murmansk were used as the geophysical index. The method of superimposed

Card 1/2 UDC: 551.5:523.745

ACC NR: AR6032353

epochs was used. Data obtained in high-altitude temperature soundings were analyzed simultaneously with disturbances in atmospheric pressure as a function of active solar regions. It was found that the temperature maximum in the 0—20-km layer occurs 7 days after the passage of the active region through the central solar meridian. B. Rubashev. [Translation of abstract]

SUB CODE: 03, 04/

Card 2/2

ACC NR: AR6028768 SOURCE CODE: UR/0269/66/000/006/0063/0064

AUTHOR: Fomenko, B. D.

TITLE: Effect of solar corpuscular fluxes on the lower layers of the earth's atmosphere

SOURCE: Ref. zh. Astronomiya, Abs. 6.51.487

REF SOURCE: Sb. Solnechn. aktivnost'. No. 2. M., Nauka, 1965, 53-84

TOPIC TAGS: solar corpuscular radiation, solar flare, lower atmosphere

TRANSLATION: The relationship between variations in atmospheric pressure in the lower layers of the earth's atmosphere and the corpuscular fluxes was examined. Fluxes from active areas causing recurrent geomagnetic disturbances, as well as fluxes related to the chromospheric flares were considered. It is found that the atmospheric pressure reaches its maximum value approximately six days after the passage of the active area through the center of the visible solar disc. The amplitude of the disturbances grows with increasing geomagnetic latitude, and decreases with the altitude. At altitudes of the order of 20 to 25 km, there is no disturbance of the atmospheric pressure. The maximum growth of the pressure caused by corpuscular fluxes from flares takes place three days after the flare. 35 references. B. Rubashev.

SUB CODE: 03

UDC: 523.75:525.23

Card 1/1

ACC NR: AR6028769 SOURCE CODE: UR/0269/66/000/006/0064/0064

AUTHOR: Fomenko, B. D.; Kubyshkin, V. V.

TITLE: Temperature changes in atmospheric disturbances caused by recurrent corpuscular solar fluxes

SOURCE: Ref. zh. Astronomiya, Abs. 6.51.488

REF SOURCE: Sb. Solnechn. aktivnost'. No. 2. M., Nauka, 1965, 85-87

TOPIC TAGS: solar activity, solar corpuscular radiation, sunspot cycle

TRANSLATION: To determine the effect of corpuscular fluxes upon temperature variations, data on the flocculi for the descending branches of the 18th and 19th cycles of solar activity were selected; the selection was made at a heliographic latitude of <6°, when the Wolf (sunspot) numbers were within 15 to 75. Data on altitude temperature probes at Tbilisi, Volgograd, Moscow, Arkhangel'sk and Murmansk were taken as a geophysical index. The superimposed-era method was used. The moment of the passage of the active area through the central meridian was set to be the zero "phase". The maximum temperature was observed seven days after the passage of the active area through the central solar meridian. 8 references. B. Rubashev.

SUB CODE: 03

UDC: 523.75:523.165

Card 1/1

IVANOV, V.F.; YAKOBSON, G.A.; FOMENKO, B.S.

Effect of soil moisture on the exchange of root exudations.
Fiziol. rast. 11 no.4:630-637 Jl-Ag '64.
(MIRA 17:11)

1. Institut fiziologii rasteniy imeni Timiryazeva AN SSSR, Moskva.

IVANOV, V.P.; YAKOBSON, G.A.; FOMENKO, B.S.

Mutual influence between corn and broad beans through their aerial organs. Fiziol. rast. 10 no.4:447-457 Jl-Ag '63. (MIRA 16:8)

1. Timiriazev Institute of Plant Physiology, U.S.S.R. Academy of Sciences, Moscow.

GRANKOVSKIY, Vladimir Fomich; KIKLEVICH, Nikolay Antonovich; SIMONCHAK, Vasiliy Trofimovich; FOMENKO, Dmitriy Ivanovich; SAPILOV, A.V., otv. red.; BELOV, V.S., red. izd-va; SABITOV, A., tekhn. red.; OVSEYENKO, V.G., tekhn. red.

[Electric equipment with 660 volt rating for mines]Rudnichnoe elektrooborudovanie na napriazhenie 660 v. [By]V.F.Grankovskiy i dr. Moskva, Gosgortekhizdat, 1962. 119 p. (MIRA 15:8)
(Mining machinery—Electric driving)

KIKLEVICH, N.A.; SIMONCHAK, V.T.; FOMENKO, D.I.; PLOSKOGOLOVYY, Yu.P.

Some shortcomings of the magnetic PMV-1365A starter for 660 voltage. Ugol' 37 no.3:32-33 Mr '62. (MIRA 15:2)

1. Donetskiy nauchno-issledovatel'skiy ugol'nyy institut.
(Electricity in mining) (Coal mining machinery)

AD'YASEVICH, B. P.; ANTONENKO, B. G.; POLUNIN, Yu.P.; FOMENKO, D.Ye.

Source of polarized ions. Atom. energ. 17 no.1:17-22 Jl '64.
(MIRA 17:7)

L 10782-66 EWT(l)/EWT(m)/T/EWP(t)/ETI/EWP(k) IJP(c) RS/JD/JH
ACC NR: AP6018611 SOURCE CODE: UR/0420/65/000/004/0107/0109

AUTHOR: Lopatin, A. I.; Balyberdin, V. V.; Chumachenko, V. S.; Gurov, V. M.; Trubchaninov, F. N.; Kirichenko, R. F.; Fomenko, F. I.

ORG: Kharkov Aviation Institute (Khar'kovskiy aviatsionnyy institut)

TITLE: Investigation of an electrohydraulic source and some of its potential applications

SOURCE: Samoletostroyeniye i tekhnika vozdushnogo flota, no. 4, 1966, 107-109

TOPIC TAGS: electrohydraulic effect, shock wave, electric discharge

ABSTRACT: The authors describe a highly efficient coaxial electrohydraulic source for industrial use. A diagram of the device is shown in figure 1. The annular aluminum electrode 2 is fastened to textolite base 1 by bolts. Stainless steel electrode 3 is fastened to the base inside the aluminum electrode and located on its central axis. Voltage is fed to the annular and central electrodes from a battery of condensers through a controllable discharger. The electrical discharge between the electrodes develops in the form of individual spark channels. A schematic diagram of the experimental unit used for testing the source is shown in figure 2.

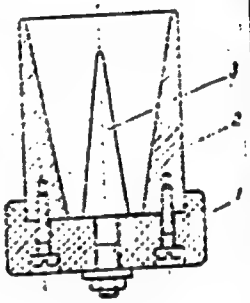

Figure 1

Card 1/3

Voltage from regulator *1* is fed through step-up transformer *2* and high-voltage rectifier *3* to condenser battery *5* with a total capacitance of 6 μf. The charging voltage is monitored on electrostatic kilovoltmeter *6*. The current in the discharge circuit is registered by a low-inductance Rogowski loop with an integrating circuit connected in the coaxial cable. The signal from this integrating circuit is fed to one channel of an oscillograph. A capacitance signal from the voltage divider is fed to the second channel of the oscillograph through a 75 Ω impedance matching resistor. Analysis of the oscillograms shows that the cyclic frequency of the discharge is 925 Kc while the inductance of the discharge circuit is 0.2 μh. The current amplitude of the discharge reaches 16 Ka when 10 Kv is applied to the condenser plates. Water velocity is a linear function of discharge voltage with the approximate equation $W=4V+1$, where W is water velocity in m/sec and V is voltage in Kv. At a distance of 3 m

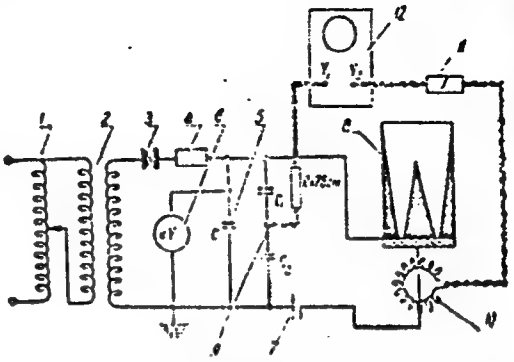

Figure 2: 1--voltage regulator; 2--step-up transformer; 3--20 Kv high-voltage rectifier; 4--60 KΩ discharge resistor; 5--IM-50-3 condenser battery; 6--S-96 kilovoltmeter; 7--discharger; 8--electrohydraulic source; 9--D6-2 voltage divider; 10--Rogowski loop; 11--integrating circuit; 12--OK-17M double beam oscillograph

L 40702-66

ACC NR: AP6018611

from the source, the cross sectional area of the water stream is no more than three times that of the source. Orig. art. has: 4 figures.

SUB CODE: 13/ SUBM DATE: none/ ORIG REF: 007

20/

Card 3/3

L 10782-66 EWT(l)/EWT(m)/T/EWP(t)/ETI/EWP(k) LJP(c) DS/ID/HW 3
ACC NR: AP6018611 SOURCE CODE: UR/0420/65/000/004/0107/0109

AUTHOR: Lopatin, A. I.; Balyberdin, V. V.; Chumachenko, V. S.; Gurov, Y. M.; Trubchaninov, F. N.; Kirichenko, R. F.; Fomenko, F. I. 36 92 B

ORG: Kharkov Aviation Institute (Khar'kovskiy aviatsionnyy institut)

TITLE: Investigation of an electrohydraulic source and some of its potential applications

SOURCE: Samoletostroyeniye i tekhnika vozdushnogo flota, no. 4, 1966, 107-109

TOPIC TAGS: electrohydraulic effect, shock wave, electric discharge

ABSTRACT: The authors describe a highly efficient coaxial electrohydraulic source for industrial use. A diagram of the device is shown in figure 1. The annular aluminum electrode 2 is fastened to textolite base 1 by bolts. Stainless steel electrode 3 is fastened to the base inside the aluminum electrode and located on its central axis. Voltage is fed to the annular and central electrodes from a battery of condensers through a controllable discharger. The electrical discharge between the electrodes develops in the form of individual spark channels. A schematic diagram of the experimental unit used for testing the source is shown in figure 2.

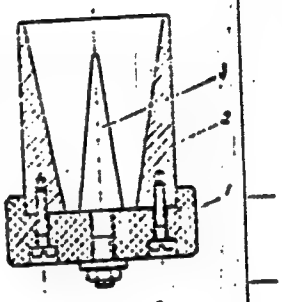

Figure 1

Card 1/3

L 40782-66
ACC NR: AP6018611

4

Voltage from regulator *1* is fed through step-up transformer *2* and high-voltage rectifier *3* to condenser battery *5* with a total capacitance of 6 μf. The charging voltage is monitored on electrostatic kilovoltmeter *6*. The current in the discharge circuit is registered by a low-inductance Rogowski loop with an integrating circuit connected in the coaxial cable. The signal from this integrating circuit is fed to one channel of an oscillograph. A capacitance signal from the voltage divider is fed to the second channel of the oscillograph through a 75 Ω impedance matching resistor. Analysis of the oscillograms shows that the cyclic frequency of the discharge is 925 Kc while the inductance of the discharge circuit is 0.2 μh. The current amplitude of the discharge reaches 16 Ka when 10 Kv is applied to the condenser plates. Water velocity is a linear function of discharge voltage with the approximate equation $W=4V+1$, where W is water velocity in m/sec and V is voltage in Kv. At a distance of 3 m

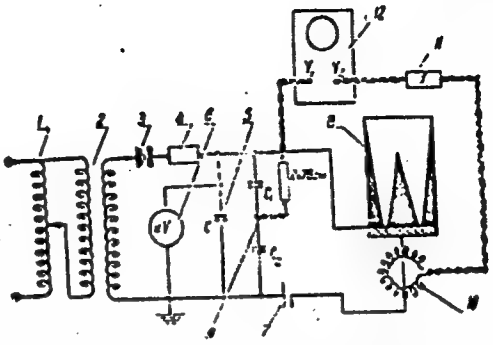

Figure 2: 1—voltage regulator; 2—step-up transformer; 3—20 Kv high-voltage rectifier; 4—60 KΩ discharge resistor; 5—IM-50-3 condenser battery; 6—S-96 kilovoltmeter; 7—discharger; 8—electrohydraulic source; 9—D6-2 voltage divider; 10—Rogowski loop; 11—integrating circuit; 12—OK-17M double beam oscillograph

Card 2/3

L 40782-66

ACC NR: AP6018611

from the source, the cross sectional area of the water stream is no more than three times that of the source. Orig. art. has: 4 figures.

SUB CODE: 13/ SUBM DATE: none/ ORIG REF: 007

20/

Card 3/3 mcp

RYZHAVSKIY, I.M.; SHEPELEVA, M.D.; KATS, F.A., nauchnyy red.; LEVIN, B.Z., nauchnyy red.; FOMENKO, V.N., nauchnyy red.; STROYEVA, Ye.V., red.; TRUSOV, N.S., tekhn.red.

[Use of hard alloys and cermets; a collection of articles] O primenenii tverdykh splavov i mineralokeramiki; sbornik statei. Moskva, 1957. 87 p. (MIRA 11:6)

1. Moscow. TSentral'nyy institut informatsii tsvetnoy metallurgii. (Alloys) (Cermets)

FOMENKO, Fedor Nikitich; GRIGORYAN, N.G., red.; GUREVICH, Ya.D., vedushchiy red.; POLOSINA, A.S., tekhn.red.

[Electric drills for drilling oil and gas wells] Elektrobury dlia bureniia neftianykh i gazovykh skvazhin. Moskva, Gos. nauchno-tekhn.izd-vo neft. i gorno-toplivnoi lit-ry, 1958. 241 p. (Boring machinery) (MIRA 12:2)

FOMENKO, F.N., inzh.

Studying losses in electric drill spindle bases and in power used by bits in well drilling. Trudy VNIIBT no.1:184-192 '58. (MIRA 11:12)

(Boring)

14(5)

SOV/92-58-8-3/36

AUTHOR: Fomenko, F.N., Member of the VNIIburtekhnika

TITLE: Flushing Wells in Electrical Drilling (Promyvka pri elektroburenii

PERIODICAL: Neftyanik, 1958, Nr 8, pp 3-6 (USSR)

ABSTRACT: The author states that the drilling of oil wells with an electric drill, connected by a cable run inside the pump-tube column to a transformer, considerably differs from other drilling methods, and has a number of advantages. In contrast to turbo-drilling where the turbine is kept in motion by a drilling fluid, which plays a very important role, the performance of the electric drill does not depend much on the quantity and quality of the drilling mud. Here it is used primarily for swabbing the borehole. A reverse flow of mud can be used for flushing the well when the latter is drilled with the electrically driven bit. Moreover, it is not necessary to maintain a high operating pressure in the pump tubes. As a result they last longer, and light centrifugal pumps can be employed instead of heavy piston pumps. Different types of electric drills such as the EBSh-250, driven by the MAP1-25-617/10 motor, and the improved E250/8, driven by the 230 kwt MAP1-25-725/8 motor which operates at 680 r.p.m., were tested by the Tuymazburneft'

Card 1/2

Flushing Wells in Electrical Drilling 92-58-3-3/36

Trust under various geological conditions and at different depths. In 2 tables the author summarizes drilling results obtained by using first one and then two pumps, and concludes that the use of two pumps of the U-8-3 type does not raise the mechanical drilling speed, and the per bit footage. In a diagram the author shows different drilling rates, attained in perforating formations at various stages and horizons with the aid of an electric drill. The author also states that experimental electrical drilling, combined with air flusing of wells, produced promising results. There are 2 tables and 1 diagram.

ASSOCIATION: VNIIburtekhnika

Card 2/2

FOMENKO, F. N., Candidate Tech Sci (diss) -- "Electric drills: methods of increasing their power and reducing their dimensions". Moscow, 1959. 15 pp (Min Higher Educ USSR, Moscow Order of Labor Red Banner Inst of the Petroleum-Chem and Gas Industry im I. M. Gubkin), 160 copies (KL, No 24, 1959, 142)

FOMENKO, F.N.

Specific power consumption in drilling wells with tricone bits. (MIRA 12:5)
Neft.khoz. 37 no.3:25-32 Mr '59.
(Oil well drilling)

FOMENKO, F.N.

New equipment for electric drilling. Neft. khoz. no.9:26-31 S. '60. (MIRA 13:9)

(Oil well drilling--Equipment and supplies)

FOMENKO, Fedor Nikitich. Prinimali uchastiye: SHKOL'NIKOV, B.M., kand. tekhn. nauk; SUD, I.I., inzh.; GRACHEV, Yu.V., kand. tekhn. nauk; PETROVA, Ye.A., ved. red.; FEDOTOVA, I.G., tekhn. red.

[Electrodrills for drilling oil and gas wells] Elektrobury dlia bureniia neftianykh i gazovykh skvazhin. 2., dop. i perer. izd. Moskva, Gos.nauchno-tekhn.izd-vo neft.i gorno-toplivnoi lit-ry, 1961. 327 p. (MIRA 14:12)
(Oil well drilling, Electric--Equipment and supplies)

FOMENKO, F.N., kand.tekhn.nauk

Ways of increasing the rotative moment of electrodrills. Trudy VNIIBT no.3:89-110 '61. (MIRA 15:1)
(Boring machinery)

S/129/63/000/001/008/017
E073/E335

AUTHORS: Fomenko, G.D., Engineer, Yegorov, V.S. and Andreyeva, A.G., Candidates of Technical Sciences

TITLE: Investigation of the contact strength of case-hardened steel 12Kh3A (12KhN3A)

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, no. 1, 1963, 23 - 25

TEXT: The effect of carbon concentration in the case-hardened layer on the contact- and fatigue-strength was investigated on specimens carburized (for 4 h) to a depth of 1-2 mm in a 15-litre capacity laboratory furnace. Sintin was used as a carburizer and the carbon content of the surface layer was about 0.75% if 5 drops/min were applied and about 1.3% if 20 drops/min were applied. After cooling in air, the specimens were heated in a salt bath to 780-800 °C, oil-quenched, cooled to -70 °C and tempered at 150 - 170 °C. The surface was then ground-off to a depth of 0.1 mm; the surface hardness was 61-63 HRC. The specimens were made to rotate between clamping rings to simulate the loading conditions of gear teeth; they were subjected during

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Investigation of ....

rotation to contact stresses varying along the circumference, the maximum being 700 kg, as well as to about 2% slip. The maximum contact strength, about 3 350 kg/cm^2, was obtained with a 1.1% C content of the surface layer. In this case, the structure of the surface zone was acicular martensite with fine carbide plates and grains. The fatigue strength increased almost linearly from about 68 kg/mm^2 for 0.6% C of the surface layer to about 75 kg/mm^2 for 0.9% C and remained almost constant with increasing C content. Therefore, to achieve the highest fatigue and contact strength the surface layer of case-hardened steel should be saturated to contain 1 - 1.2% C.

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ACCESSION NR: AP4020246 S/0129/64/000/003/0033/0037

AUTHOR: Yegorov, V. S.; Andreyeva, A. G.; Fomenko, G. D.

TITLE: Gas cyaniding and carburizing of stainless Kh17N2-(EI268) steel

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 3, 1964, 33-37, and insert facing p. 41

TOPIC TAGS: diffusion layer, hardness, carburization, cyanidation, sub zero treatment, Kh17N2 steel, stainless steel

ABSTRACT: The authors investigated the possibility of obtaining a thin layer with a hardness higher than Rockwell hardness 58. For that purpose, steel Kh17N2 specimens were cyanided in a 10-liter laboratory muffle furnace into which pyrobenzol and ammonia were introduced. Air cooling was followed by oil quenching from 1020 C. Finally, the specimens were treated at -70 C and subsequently tempered at -160 C. Hardness was highest after treatment at 700-750 C. The zone with a hardness of H_{μ}=700 was 0.075-0.12 mm deep. 40-45 cm^3/min ammonia and 15 to 18 drops pyrobenzol per minute introduced into the furnace were found to enhance hardness which reached H_{μ}=1040 without changing the depth of the active

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ACCESSION NR: AP4020246

zone which was 0.5 mm deep after a six-hour holding period. Sub-zero treatment prior to high-temperature tempering did not affect the amount of residual austenite in the layer and the temper hardness. The authors recommend the application of sub-zero treatment at temperatures of -70 C or -120 C for case-hardened Kh17N-2 steel parts. If the sub-zero treatment is applied for the purpose of enhancing hardness characteristics of the carburized layer, the cooling media should have a temperature of -70 C. Volumetric changes are effectively prevented by the application of a sub-zero treatment at -120 C. Orig. art. has: 9 figures.

ASSOCIATION: None

SUBMITTED: 00 DATE ACQ: 31Mar64 ENCL: 00

SUB CODE: MM NO REF SOV: 003 OTHER: 000

Card 2/2

L 10006-65 EWT(d)/EWT(m)/EPF(c)/EWA(d)/EWP(v)/EPR/T/EWP(t)/EWP(k)/EWP(h)/EWP(z)/EWP(b)/EWP(l) Pf-4/Pr-4/Ps-4/Pu-4/Pad IJP(c) MJW/JD/HW/JG/GS

ACCESSION NR: AT4049813 S/0000/64/000/000/0056/0062

AUTHOR: Alekseyenko, M. F.; Andreyeva, A. G.; Yegorov, V. S.; Fomenko, G. D.

TITLE: Hardening of stainless heat resistant and heatproof steels by thermal diffusion

SOURCE: Soveshchaniye po uprochneniyu detaley mashin, 1962. Protsessy uprochneniya detaley mashin (Processes of the hardening of machine parts); doklady soveshchaniya. Moscow, Izd-vo Nauka, 1964, 56-62

TOPIC TAGS: stainless steel, stainless steel hardening, stainless steel thermal diffusion, stainless steel nitriding, stainless steel carburizing, heat resistant steel, heatproof steel, steel corrosion resistance

ABSTRACT: The paper describes the results of investigations of the surface hardening of stainless heatproof and heat-resistant steels. These tests were required in order to increase the durability and wear resistance of parts operating under corrosive conditions, as well as at high temperatures. Austenitic EI-69 and EI-946 steel, SN2, SN3 and SN4 steel, martensitic 1Kh13, Kh17N2, EI-736 and EI-961 steel, as well as EI-696 and EI-786 heat resistant steels were tested. Prior to

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L 40006-65
ACCESSION NR: AT4049813

8

thermal diffusion, the oxides on the stainless steel should be removed by sand blasting, etching and other methods. The best method is nitriding with NH_4Cl. Corrosion stability is lowered when stainless steels are nitrided. In martensitic and ferritic nitrided steels, 50-80% of the total thickness of the nitrided layer shows low corrosion stability, while in austenitic steels this is only true of 2.-40%. This depth depends on the phase composition and chromium and nitrogen [illegible] to the solid solution. The depth of the nitrided layer depends on the [illegible] of steel, ЭИ481УиА steel having the deepest nitrided layer. In turn, this depends on the type of crystal lattic and quantity of alloying elements. As the content of chromium increases, the depth of the nitrided layer drops, being 0.2 mm for a chromium content of 25%. Increasing the temperature from 560 to 650C does not affect the depth of the layer. Nickel lowers the nitride depth to an even greater extent. The addition of tungsten, molybdenum, titanium vanadium and aluminum up to 5% lowers the depth to the same degree as chromium, but in this case the depth of the nitride layer depends on the temperature. The optimal depth of nitriding for martensitic steel is attained at 550-600C. Austenitic steels show a limiting depth at 550C. The hardness of the nitrided steel depends on the nitriding compounds and temperature, determining the degree of nitride dispersion.

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L 40036-65

ACCESSION NR: AT4049813

Variation of nickel content does not change the hardness. Nitrided stainless steels tested on the IMASh machine showed high wear resistance up to 600C. The coefficient of friction dropped from 0.7 at 20C to 0.1 at 600C. The quality of the [illegible] layer depends on the grain size. Carburizing of heat treated steel also results in loss of corrosion stability. This is explained by the redistribution of chromium between the solid solution and the carbides. By nitrocarburizing it is possible to harden all tested grades of steel, especially Kh17N2 and EI-696 [illegible] the same loss of corrosion stability is observed. Orig. art. has: 5 figures.

ASSOCIATION: None

SUBMITTED: 21May64 ENCL: 00 SUB CODE: MM

NO REF SOV: 005 OTHER: 000

Card 3/3

YEMEL'YANOV, V.P.; ILYUKOVICH, B.M.; MERKUR'YEV, S.Ye.; FOMENKO, G.G.

In the rolling mills of the land. Metallurg 10 no.12:38 D '65.
(MIRA 18:12)

1. Chusovskiy metallurgicheskiy zavod (for Ilyukovich, Merkur'yev).

S/068/60/000/003/002/003
E071/E233

AUTHORS: Kolyandr, L. Ya., Tyaptina, M. I., and Fomenko, G.M.

TITLE: Impurities in Pure Benzole

PERIODICAL: Koks i khimiya, 1960, No. 3, pp. 42-47

TEXT: The nature of impurities present in pure benzole and sensitivity of methods of their determination are discussed in the light of the author's own and literature data. The sensitivity of methods of determination of the individual sulphurous compounds was tested by using samples of pure benzene with addition of known proportion of the corresponding sulphur compounds (thiophene - Table 1; elemental sulphur - Table 2; mercaptons - Table 3). It is concluded that the sensitivity of methods of determining the individual sulphur compounds as percent of sulphur is as follows: Thiophene (isatin tests) down to 0.00005% elemental sulphur (copper strip) - down to 0.0005%; mercaptons (doctor's test) - down to 0.0002; carbon disulphide (reaction with diethylamine) - down to 0.0001%. The main impurities in pure benzole are hydrocarbons of paraffin and cycloparaffin series, n-heptane, cyclohexane, dimethylpentanes and methyl cyclopentane (Table 4). The

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S/068/60/000/003/002/003
E071/E233

Impurities in Pure Benzole

determination of non-aromatic impurities can be done cryoscopically using the following formula: $x = 1.80 \cdot \Delta t$, where x - content of non-aromatic hydrocarbons in wt.%, and Δt - temperature depression. The accuracy of the equation in which the mean molecular weight of non-aromatic impurities was taken as 92 is sufficient for the purpose (Table 5). On careful rectification non-aromatic compounds are concentrated in the head and final fractions (Table 6) and by combining various fractions the quality of the pure benzole can be controlled (Table 7). The influence of the toluene content on the boiling range of benzole is shown in Table 8. By limiting the boiling range of benzene to 0.5-0.6°C, the content of toluene below 0.1% can be guaranteed. The content of nitriles in various pure benzoles expressed in mg of ammonia per litre (Table 9) varies from 5-10 mg/l. In the content of naphthalene in pure benzole on average about 0.01%. The synthesis grade of benzole obtained by redistillation the naphthalene content should not exceed 0.001%. There are 9 tables and 18 references: 5 Soviet and 13 non-Soviet.

ASSOCIATION: UKhIN
Card 2/2

KOLYANDR, L.Ya.; FOMENKO, G.M.; STARKOVA, L.S.

Obtaining industrial carbon disulfide of a higher quality. Koks i khim. no.9:44-46 '62. (MIRA 16:10)

1. Ukrainskiy uglekhimicheskiy institut.
(Carbon disulfide) (Coke industry--By-products)

KOLYANDR, L.Ya.; FOMENKO, G.M.; STARKOVA, L.S.

Ways to increase the yield and improve the quality of dicyclopentadiene. Koks i khim. no.12:29-34 '63.
(MIRA 17:1)

1. Ukrainskiy uglekhimicheskiy institut.

PETROV, L.A.; FOMENKO, G.N.; KACHEGIN, V.F.

Advantage of using wood and concrete rod bolting. Gor.zhur. no.10:72-73 O '64. (MIRA 18:1)

1. Sibirskiy proyektnyy nauchno-issledovatel'skiy institut tsvetnoy metallurgii (for Petrov, Fomenko). 2. Glavnyy inzh. Sovetskogo rudnika Krasnoyarskogo soveta narodnogo khozyaystva (for Kachegin).

FOMENKO, G.N., aspirant

Rhinoplasty in herd bulls. Veterinariia 42 no.10:60-62 O '65.
(MIRA 18:10)

1. Khar'kovskiy zootekhnicheesko-veterinarnyy institut.

S/058/63/000/001/017/120
A062/A101

AUTHOR: Dimov, G. I., Fomenko, G. P.

TITLE: Betatron with a toroidal magnetic field

PERIODICAL: Referativnyy zhurnal, Fizika, no. 1, 1963, 41, abstract 1A384 (In collection: "Elektron. uskoriteli." Tomsk, Tomskiy un-t, 1961, 91 - 99)

TEXT: The motion of electrons in a betatron with an additional toroidal magnetic field directed along the orbit has been studied approximately. On the basis of this study a conclusion is drawn on the possibility of stable acceleration of particles in such a betatron; for an efficient injection a large rate of increase of the toroidal magnetic field is then required. It is maintained that, due to the increase of focusing, the intensity of accelerated particles in the betatron considered is higher by 3 - 4 orders than in the conventional betatron and is determined chiefly by the magnitude and rate of increase of the toroidal magnetic field.

A. Fateyev

[Abstracter's note: Complete translation]

Card 1/1

L 33161-65 EWT(m)/EPA(w)-2/EWA(m)-2 Pt-10/Pab-10 IJP(c)
ACCESSION NR: AP5005231 S/0057/65/035/002/0293/0297

AUTHOR: Didenko, A.N.; Fomenko, G.P. 38 B

TITLE: Influence of beam loading on the shunt resistance of the accelerating system of a cyclic electron accelerator 19

SOURCE: Zhurnal tekhnicheskoy fiziki, v.35, no.2, 1965, 293-297

TOPIC TAGS: cyclic accelerator, synchrotron, linear accelerator, resonator Q factor

ABSTRACT: The influence of beam loading on the operation of a cylindrical resonant electron accelerator is discussed theoretically. The electron beam is assumed to be [illegible] the bunches to have negligible dimensions. The [illegible] is calculated by expanding in normal modes of the [illegible] and an [illegible] derived for the energy lost by the beam [illegible]. The Q of the accelerator cavity is expressed in terms of an equivalent shunt resistance and a [illegible] derived for the voltage in the accelerating gap [illegible] the power applied, and the [illegible] power and beam characteristics which is an optimum equivalent

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L 33161-65
ACCESSION NR: AP5005231

shunt resistance that produces maximum acceleration. The results are illustrated by calculations relating to the Cambridge Electron Accelerator (CEA-81 1960). It [illegible] that with a power of 300 kW and a bunch size of 2.6 x 10^9 particles the optimum equivalent shunt resistance is 300 megohm. The actual equivalent shunt resistance of 120 megohm would be optimal if the bunch size were 4.8 x 10^9 particles. [illegible] has 16 formulas and 1 figure.

ASSOCIATION: none

SUBMITTED: 10Apr64 ENCL: 00 SUB CODE: NP,EM

NR REF SOV: 005 OTHER: 003

ACC NR: AP5010608 UR/0057/65/035/004/0705/0710

AUTHOR: Minenko, L.I.; Fomenko, G.P.

TITLE: Investigation of the electron beam from a ring gun

SOURCE: Zhurnal tekhnicheskoy fiziki, v.35, no.4, 1965, 705-710

TOPIC TAGS: electron beam, space charge, injector, betatron, ring gun, electron gun

ABSTRACT: The authors are interested in a method of betatron injection proposed by G.I.Dimov (Izv. VUZov, Fizika 1,62-71,1957) that employs a hollow conical converging electron beam. In the present paper they calculate the influence of space charge on the motion of the electrons in the region of the crossover and report results of measurements with an experimental beam. The inner and outer diameters at the gun of the 1.6 A experimental beam of 10 kev electrons were 5.5 and 6.3 cm, respectively. The vertex angle of the conical beam was 2 x 13°, and the focus (crossover) was accordingly 15 cm from the gun. Preliminary observation of the beam was performed with a movable fluorescent screen, and the current distribution was measured with a multiple collector. Information concerning the radial velocity distribution in the beam was obtained by examining the cross-section variation of the

L 43201-65
ACCESSION NR: AP5010808

portion of the beam that passed through a 0.5 mm diameter aperture in a screen. It was found that when the space charge was sufficiently great the hollow conical con- became, after the crossover, a solid diverging beam with the maximum on the axis. Moderate discrepancies between theory and experiment the influence of ionized molecules of the residual gas (the pres- was (1-3) x 10^{-6} mm Hg. A future study of betatron [illegible] with hollow conical electron beams is promised. Orig.art.has: 10 formulas and 6 figures

[02]

ASSOCIATION: none

SUBMITTED: 11Jun64 ENCL: 00 SUB CODE: NP

NO REF SOV: 006 OTHER: 001 ATD PRESS: 3242

Card 2/3 1145

L 11429-67 EWT(m) IJP(c)

ACC NR: AP6031260 SOURCE CODE: UR/0057/66/036/009/1560/1568

AUTHOR: Didenko, A. N.; Fomenko, G. P. 44

ORG: None

TITLE: The use of high-frequency fields for focusing particles in cyclic accelerators 19

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 9, 1966, 1560-1568

TOPIC TAGS: particle accelerator, circular accelerator, focusing accelerator, electron optics, alternating electromagnetic field, high frequency, strong focusing

ABSTRACT: The authors discuss the focusing by high-frequency electromagnetic fields of charged particles moving in a toroidal track of circular or rectangular cross section. It is shown that strong focusing can be achieved in a weak-focusing accelerator with the aid of either traveling or standing waves. Conditions for the stability of the motion and expressions for the strength of the focusing are derived. For strong focusing, the high frequency magnetic field must be stronger than the dc guiding field, and focusing is most readily achieved with traveling waves propagating in the direction opposite to that of the motion of the particles. In the calculations for the toroidal track with circular section it was assumed that the high frequency field has the same form as in a straight waveguide of circular section. The equations of motion of a particle in the presence of TE waves reduce for zero wave frequency to those for a

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ACC NR: AP6031260

particle moving in a p-fold helical field (p is an integral parameter) and, for the values of 2 and 3 of p, to the equations of motion obtained by V.S.Zakharov and M.S. Rabinovich (ZhTF 34, 1986, 1992, 1964) for a charged particle in a double or triple helical field. In the case of a toroidal track of rectangular cross section the high frequency fields in a straight waveguide cannot be employed in the calculations because the curvature of the track lifts the degeneracy of the TE and TM modes. For the rectangular cross section calculations the field is expanded in LE and LM waves, and results analogous to those for the circular cross section case are obtained. In all these calculations it is assumed that the component of the velocity of the particle in the direction of the track is constant. In a final section a criterion for the validity of that assumption is derived and an integral of motion is obtained with the aid of which corrections can be calculated in case the criterion is not met. Orig. art. has: 29 formulas.

SUB CODE: 20/ SUBM DATE: 08Oct65/ ORIG REF: 020/ OTH REF: 004

Card 2/2 bab

Fomenko, D.E.

AUTHOR SKLYAREVSKIY,V.V., FOMENKO, D.E., STEPANOV,E.P. PA - 2669

TITLE Investigation of U^{235} Fission γRays in the Energy Range up to 250 keV
(Izlucheniye γ-luchey deleniya U^{235} v oblasti energiy do 250 keV-Russian)

PERIODICAL Zhurmal Eksperim. i Teoret. Fiziki,1957, Vol,32, No.2, pp 256-262
U.S.S.R.

Received 5/1957 Reviewed 6/1957

ABSTRACT

The process described in the paper under review uses the method of geometrical fission, in which the γ-rays that are emitted from the fission product are measured sepatately. With the aid of this method it was possible to determine that the main part of the γ-rays(at fissions in the energy range up to 250 keV) is emitted by the fission products. The experimental arrangement is demonstrated in a sketch. An ionization chamber with a layer of U^{235} was placed into a bundle of thermal neutrons of a reactor. The spectrum of the γ-rays was measured by means of a scintillation spectrometer with NaJ(Tl) crystal.

The results and their discussion: Several diagrams show the spectra of the true and of the accidental coincidences. The peaks of these spectra are probably caused by secondary effects. The peak at 60 keV is created by nonelastic scattering of the fission neutrons by the iodine nuclei in the NaJ(Tl) crystals. The peak at 75 keV characterizes the Roentgen-K-radiation of lead which is caused in the protective layer (surrounding the crystal) by γ-rays

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Investigation of U^{235} Fission γ-Rays in the Energy Range up to 250 keV. PA - 2669

and fission neutrons. The spectra were recorded in different positions of the crystal and they have almost identical shapes but different intensities. The spectrum of the γ-rays which are created at fission in the energy range from 100 to 250 keV consists of many lines. These lines correspond to the γ-rays which are emitted by different fission products in excited states. These states are created after the emission of neutrons and hard γ-rays by the fission fragments. The life span of these states ($\sim 10^{-9}$ sec) obviously indicates a dipole-like character of the transitions. To the quadrupole transition with the life span of 10^{-9} sec there corresponds a quadrupole moment of the nucleus of $\sim 2.5 \cdot 10^{-24}$ cm^2.
(6 reproductions and 1 chart).

ASSOCIATION Institute of Atomic Energy, Academy of Sciences of the USSR.
PRESENTED BY
SUBMITTED 24.9.1956
AVAILABLE Library of Congress
Card 2/2

FOMENKO, G., starshiy radiomaster.

Shock absorber for Kulikov's antenna. Voen. sviaz' 16 no.5:47 My '58. (MIRA 11:5)
(Radio--Antennas)

Fomenko G.M.

68-58-2-10/21

AUTHORS: Kolyandr, L.Ya., Orlov, M.L., Tyaptina, M.I. and Fomenko, G.M.

TITLE: Production of High-quality Benzole for Organic Synthesis (Polucheniye vysokokachestvennogo benzola dlya organicheskogo sinteza)

PERIODICAL: Koks i Khimiya, 1958, Nr 2, pp 44 - 46 (USSR)

ABSTRACT: A new standard for benzole for synthesis I, introduced in September, 1957, required a very low concentration of thiophene (0.005%). An investigation was carried out in order to study the process of purification of benzole-toluole fraction up to the limits required for the benzole synthesis I and to develop the optimum scheme for the production of such benzole. The investigation of the appropriate fractions from Zaporozhe and Bagleysk Coke Oven Works (Table 1) under laboratory conditions was carried out. At first, a direct washing of the whole fractions was tested (Table 2); the results obtained indicated that this method of purification is unprofitable. Therefore, the following investigations were carried out: 1) Separation of BTX (mixed) fraction into a narrow benzole fraction and a toluole-xylole fraction with their subsequent treatment to a required purity; 2) The usual washing of mixed fraction to limits required to obtain pure products

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Production of High-quality Benzole for Organic Synthesis

(bromine numbers benzole $\leqslant$0.6; toluole $\leqslant$0.3) with subsequent washing of pure benzole to the required standard. Experimental results are given in Tables 3-5. It is concluded that for Southern works, the second scheme is most suitable, but for Eastern works, which deal with low-sulphur products, the first scheme may be more rational. It is pointed out that both methods of production of benzole for synthesis are imperfect and that further research is necessary. There are 5 tables and 6 references, 2 of which are Soviet, 2 English, 1 French and 1 German.

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1. Benzole - Production 2. Benzole - Purification
3. Benzole - Synthesis

SOV/68-58-11-13/25

AUTHORS: Kolyandr L.A., Tyaptina M.I., and Fomenko G.M.

TITLE: The Composition of Crude Benzole (Sostav Syrogo Benzola)

PERIODICAL: Koks i Khimiya, 1958, Nr 11, pp 38-42 (USSR)

ABSTRACT: Chemical composition of crude benzole is discussed taking as an example of crude benzoles obtained by coking of Donets coals. The influence of coking temperature within ranges 950, 1000-1050 and 1050-1100°C on the composition of crude benzole is given in Table 1, typical composition of raw benzole in Table 2, the distribution of unsaturated hydrocarbons between the individual benzole fractions in Table 3, and its dependence on coking temperature in Table 4; the types of sulphur compounds and their distribution between various benzole fractions in Tables 5-7, the distribution of saturated compounds between various benzole fractions in Table 8 and their

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The Composition of Crude Benzole SOV/68-58-11-13/25

influence on the properties of benzole and xylole fractions in Tables 9 and 10 respectively.
There are 10 tables and 5 references (3 Soviet and 2 German)

ASSOCIATION: UKhIN

Card 2/2

S/068-x/60/000/008/001/003
E071/E435

AUTHORS: Kolyandr, L.Ya., Tyaptina, M.I. and Fomenko, G.M.

TITLE: The Composition and Yield of Xylole, a By-Product of the Coal Carbonization Process

PERIODICAL: Koks i khimiya, 1960, No.8, pp.41-44

TEXT: The composition of technical xylole, a by-product of the coal carbonization process, was little investigated, mainly due to lack of reliable methods and the lack of demand for the individual isomers. In the paper, the yield and composition of xylole produced on 9 coking works was investigated using mean dynamic samples for the fourth quarter of 1957. In addition to xylole fraction a part of xylole remains in heavy benzole and solvent naphtha; it was therefore necessary to determine the content of xylole in the above two products (Table 1). The determination of the xylole content was done by careful rectification using a column equivalent to 30 theoretical plates at reflux ratio of 5 - 6, whereupon the fraction boiling at 135.0 to 144.5°C was considered as xylole. The distribution of xylole between the individual products was found to be as follows: 78.8% pure xylole fraction

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S/068-x/60/000/008/001/003
E071/E435

The Composition and Yield of Xylole, a By-Product of the Coal Carbonization Process

(GOST 10465-39), 13.1% solvent naphtha (GOST 1923-50) and 8.1% heavy benzole. The content of the individual isomers in technical xylole as well as in xylole separated from solvent naphtha and heavy benzole was determined by the spectrophotometric method. In addition, paraxylole was determined cryoscopically and methaxylole was determined by the usual method through trinitromethaxylole. Non-aromatic admixtures (paraffins and naphthenes) were determined spectrophotometrically (the difference between 100 and the sum of determined aromatics) and by the usual method; sulphonation with 98% sulphuric acid (at 20° for 20 min). The content of toluol was determined by rectification. The composition of xyloles from the individual works was found to be similar and is given in Table 2. On the average, the composition of technical xylole was as follows, in %: ethylbenzene 4.8; paraxylene 21.1; methaxylene 58.0; orthoxylene 13.5; toluene 1.3; non-aromatic and other admixtures 1.3. The composition of xyloles separated from solvent naphtha and heavy benzole was, on average, as follows: 3.6% ethylbenzene:

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S/068-x/60/000/008/001/003
E071/E435

The Composition and Yield of Xylole, a By-Product of the Coal Carbonization Process

16.5% paraxylene; 48.5% methaxylene; 28.5% orthoxylene; 2.9% unsaturated and other admixtures (for individual work see Table 3). The average overall composition of xylole was: 4.5% ethylbenzene; 20.1% paraxylene; 56% methaxylene; 17% orthoxylene; 2.4% unsaturated and other admixtures; it differs from the equilibrium composition (given in Table 4). The following yield of the individual isomers was obtained from raw benzole (mean sample for the fourth quarter 1957): 0.23% ethylbenzene; 0.97% paraxylene; 2.70% methaxylene; 0.82% orthoxylene. There are 4 tables and 5 references: 3 Soviet, 1 English and 1 German.

ASSOCIATION: UKhIN

Card 3/3

FOMENKO, G. S.

NEKRYACH, Ye.F. [Nekriach, IE.F.]; NAZARENKO, Yu.P.; CHERNETSKIY, V.P., [Chernets'kyi, V.P.]; BABKO, A.K., akademik, otv.red.; ROZUM, Yu.S., kand.khim.nauk, red.; FIALKOV, Ya.A., red. [deceased]; FOMENKO, G.S. [Fomenko, H.S.], kand.khim.nauk, red.; SHEKA, I.A., prof., doktor khim.nauk, red.; GNATYUK, G.M. [Hnatiuk, H.M.], red.-leksikograf; POKROVSKAYA, Z.S. [Pokrova'ka, Z.S.], red.izd-va; YEFIMOVA, M.I. [IEfimova, M.I.], tekhn.red.

[Russian-Ukrainian chemical dictionary; 6000 words and terms] Russko-ukrainskii khimicheskii slovar'; 6000 terminov. Sost.E.F.Nekriach, IU.P.Nazarenko i V.P.Chernetskii. Kiev, 1959. 204 p. (MIRA 13:4)

1. Akademiya nauk USSR, Kiyev. 2.AN USSR (for Babko). 3. Chlen-korrespondent AN USSR (for Fialkov).

(Chemistry--Dictionaries)
(Russian language--Dictionaries--Ukrainian)

ABRAMOVA, T.M.; GANKINA, I.L. [Hankyna, I.L.]; FOMENKO, G.S. [Fomenko, H.S.]

Investigating cathode reduction of oxygen to hydrogen peroxide on a carbon-nickel electrode. Dop.AN URSR no.9:974-976 '58.
(MIRA 11:11)

1. Institut fizicheskoy khimii im. L.V.Pisarzhevskogo AN USSR. Predstavil akademik A.I.Brodskiy [O.I.Brods'kyi].
(Hydrogen peroxide)

NEKRYACH, Ye.F. [Nekriach, IE.F.]; NAZARENKO, Yu.P.; CHERNETSKIY, V.P. [Chernets'kyi, V.P.]; [Babko, A.K.], akademik, otv.red.; ROZUM, Yu.S., kand.khim.nauk, red.; FIALKOV, Ya.A. [deceased], red.; FOMENKO, G.S. [Fomenko, H.S.], kand.khim.nauk, red.; SHEKA, I.A., prof., doktor khim.nauk, red.; GNATYUK, G.M. [Hnatiuk, H.M.], red.-leksikograf; POKROVSKAYA, Z.S. [Pokrovs'ka, Z.S.], red.izd-va; YEFIMOVA, M.I. [IEfimova, M.I.], tekhn.red.

[Russian-Ukrainian chemical dictionary; 6000 words] Rossis'ko-ukrains'kyi khimichnyi slovnyk; 6000 terminiv. Kyiv, Vyd-vo Akad.nauk URSR, 1959. 204 p. (MIRA 15:5)

1. AN USSR (for Babko). 2. Chlen-korrespondent AN USSR (for Fialkov).

(Chemistry—Dictionaries)
(Russian language—Dictionaries—Ukrainian)

BIBIKOV, I.; DEREVYANKO, K.; KAZACHKO, V.; KIRICHENKO, I.; KUCHER, N.; MACHUKHO, A.; NABATNIKOV, P.; SOKOLOV, E.; SIVOKON'Ya; US, V.; SHCHIGALEV, V.; BURAVENKO, N.; KOVSHAROV, S.; SOKOLOV, S.; ZAGORUL'KO, S.; TSYBA, M.; FOMENKO, I.; LYAKHOVETSKIY, M.

Let us help farmers grow an abundant crop. Grazhd. av. no.3:3 Mr '61. (MIRA 14:3)

(Aeronautics in agriculture)

S/182/60/000/007/012/016/XX
A162/A029

AUTHORS: Zaykovskiy, G.S.; Dytynenko, M.I.; Fomenko, I.A.

TITLE: New Technological Process for Stamping of Connecting Rods

PERIODICAL: Kuznechno-shtampovochnoye proizvodstvo, 1960, No. 7, pp. 15 - 17

TEXT: The forging of connecting rods at several Soviet plants is described. At the Automobile Plants of Gor'kiy and the Moscow Plant imeni Likhachev the process is time-consuming and requires much skill from the press operator. Eleven forming stages are necessary. The technology of the process has been improved at the Moskovskiy zavod malolitrazhnykh avtomobiley (Moscow Small-Capacity Automobile Plant). The two connecting rods are stamped simultaneously from one billet on a 2,000-ton mechanical fofging press in three operations (Fig. 2). A different, simpler and swifter process is used at the Luganskiy zavod imeni 20-letiya Oktyabrya (Lugansk Plant imeni of the 20-th October Anniversary) for manufacturing the "Moskvich" automobile connecting rod. It consists of a machine line (Fig. 3) and includes forging rolls and hot stamping presses. The billets are cut from a 42-mm round rolled bar of "45" steel on shears in the line. The 40-ton forging rolls are shown in a photo (Fig. 5). The billet passes from the

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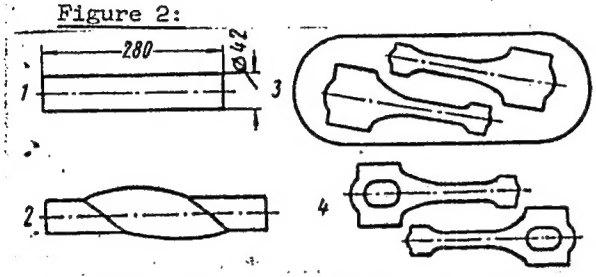
New Technological Process for Stamping of Connecting Rods

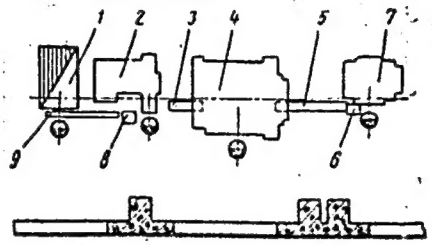
rolls to a 1,600-ton crank press which gives it its final shape in three strokes. The ridges are coined afterwards on a 2,000-ton coining press. The forging rolls operations with 3 passes requires 5-6 sec. A 30-mm shorter billet is needed for the process and is three times as productive as stamping in presses, 323 g of metal are economized on every rod, i.e., 21%, and the mechanical properties of rolled billets are higher.

Figure 2:



Technological Process for Stamping Connecting Rods on M3MA(MZMA): 1-billet for 2 parts; 2-distortion bending; 3-stamping Card 2/3 in 2 operations; 4-trimming.

Figure 3:



Machine Line: 1-heating furnace; 2-forging rolls; 3-hot-stamping crank press with a force of 1,600t; 5,9-chain transporters; 6,8-tables; 7-trimming crank press.

S/182/60/000/007/012/016/XX
A162/A029

New Technological Process for Stamping of Connecting Rods

Figure 5:

Forging Rolls

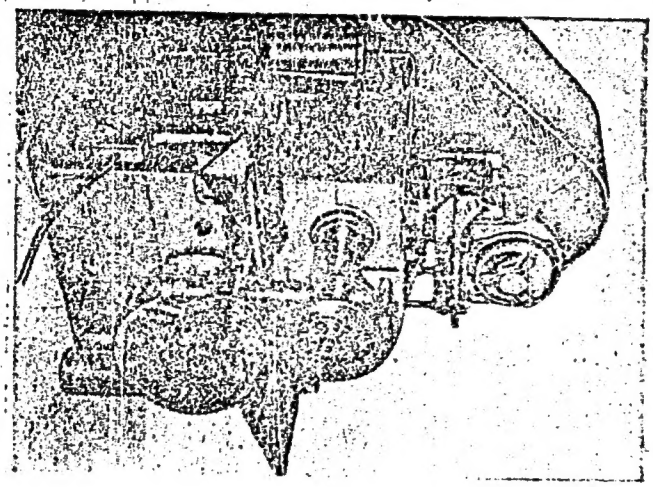


Рис. 5. Ковочные валки.

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